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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/838,118	04/20/2001	Hiroshi Takanashi	2001-0476	9938

513 7590 04/26/2002

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EXAMINER

LEE, SIN J

ART UNIT	PAPER NUMBER
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1752

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DATE MAILED: 04/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/838,118

Applicant(s)

TAKANASHI ET AL.

Examiner

Sin J Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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1. In view of the amendment of February 21, 2002 (in which applicants omitted -SO₂NHR² from the list of X group), the previously made rejections on claims 1-4 over Pine'640 are hereby withdrawn.

2. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

3. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kashio et al (5,688,632) in view of Nishimiya et al (6,030,748).

Kashio teaches (col.2, lines 42-45, col.3, lines 28-32, col.9, lines 29-30) a photosensitive polymer composition containing a soluble polymer (a combination of a water-soluble polymer and an alcohol-soluble polymer), a photopolymerizable compound having an ethylenic double bond in the molecule thereof, a photopolymerization initiator, and a polymerization inhibitor

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(which is added to improve the thermal stability of the composition). Therefore, Kashio teaches present components (A)-(D).

Kashio does not teach present component (E). It is known in the art to add an organic acid into a photosensitive composition in order to increase sensitivity of the composition. For example, Nishimiya et al teaches (col.55, lines 42-63) *benzoic acid* as one of the examples of organic acids that can be added to a photosensitive composition for increasing sensitivity. Since there are not that many examples listed in Nishimiya for the organic acid, it is the Examiner's position that it would have been obvious to one of ordinary skill in the art to add benzoic acid into Kashio's photosensitive composition in order to increase sensitivity of Kashio's photosensitive composition as taught by Nishimiya. Present specification includes (pg.20, first line) the benzoic acid among the examples of the component (E) having the formula (I). For benzoic acid, present X would be -COOH , and R^1 would be an unsubstituted aromatic hydrocarbon group. Nishimiya teaches (col.55, line 67, col.56, lines 1-2) that the amount of the organic acids in the photosensitive composition is preferably from 0.05 to 15 wt %. Since this range overlaps with present range of 0.001 to 0.3%, the prior art's range would have made present range *prima facie* obvious. In the case "where the [claimed] ranges overlap or lie inside ranges disclosed by the prior art," a *prima facie* case of obviousness would exist which may be overcome by a showing of unexpected results, In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976). Therefore, Kashio in view of Nishimiya would render obvious present component (E) in the amount of 0.001 to 0.3%.

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Kashio teaches that his photosensitive layer is applied to a substrate and that it is preferred that the photosensitive layer be formed to a thickness of 0.01 to 10 mm. This range overlaps with present range of 0.45 to 0.8 mm and thus renders prima facie obvious present thickness range. Therefore, Kashio in view of Nishimiya teach present inventions of claims 1 and 3.

With respect to present claim 2, since benzoic acid has a boiling point of 249°C, Kashio in view of Nishimiya teach present invention of claim 2.

With respect to present claim 4, Kashio teaches (col.9, lines 66, 67, col.10, lines 1-12) that in his invention, a printing plate is formed by brining a mask into close contact with the upper surface of the photosensitive layer, then radiating an UV light to the photosensitive layer through the mask, allowing photopolymerization to take place for insolubilization, and subsequently dissolving out unpolymerized portion into water by means of a spray type or brush type developing apparatus using neutral water to form a relief image on the substrate. Therefore, Kashio in view of Nishimiya teach present invention of claim 4.

4. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pine (4,361,640) in view of Nishimiya et al (6,030,748).

Pine teaches a photopolymerizable element (useful for making printing plates) comprising a *support* bearing a layer of a photopolymerizable composition. See abstract and col.1, lines 20-24. Pine's photopolymerizable composition contains a binder system (*present component (A)*), an ethylenically unsaturated monomeric compound having at least two terminal

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ethylenic groups capable of forming a high polymer by free-radical initiated chain-propagated addition polymerization (*present component (B)*), a free radical generating addition polymerization initiator (*present component (C)*), a thermal polymerization inhibitor (*present component (D)*).

Pine does not teach present component (E). It is known in the art to add an organic acid into a photosensitive composition in order to increase sensitivity of the composition. For example, Nishimiya et al teaches (col.55, lines 42-63) *benzoic acid* as one of the examples of organic acids that can be added to a photosensitive composition for increasing sensitivity. Since there are not that many examples listed in Nishimiya for the organic acid, it is the Examiner's position that it would have been obvious to one of ordinary skill in the art to add benzoic acid into Pine's photosensitive composition in order to increase sensitivity of Pine's photosensitive composition as taught by Nishimiya. Present specification includes (pg.20, first line) the benzoic acid among the examples of the component (E) having the formula (I). For benzoic acid, present X would be -COOH, and R¹ would be an unsubstituted aromatic hydrocarbon group. Nishimiya (col.55, line 67, col.56, lines 1-2) teaches that the amount of the organic acids in the photosensitive composition is preferably from 0.05 to 15 wt %. Since this range overlaps with present range of 0.001 to 0.3%, the prior art's range would have made present range *prima facie* obvious. In the case "where the [claimed] ranges overlap or lie inside ranges disclosed by the prior art," a *prima facie* case of obviousness would exist which may be overcome by a showing

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of unexpected results, see In re Wertheim, supra. Therefore, Pine in view of Nishimiya would render obvious present component (E) in the amount of 0.001 to 0.3%.

As to the present limitation of claim 1 for the thickness of the photosensitive layer (0.45-0.8 mm), Pine teaches (col.2, lines 20-23) thickness for the photopolymerizable layer to be in the range of 0.0127 mm to 6.35 mm (as converted by the Examiner). Since this range overlaps with present range, the prior art's teaching would have made present range *prima facie* obvious. In re Wertheim, supra.

Also, as to the present limitation, "a *negative working* photosensitive resin composition", since Pine's printing plate is made by removing the unexposed portions of the photopolymerizable layer (see col.5, lines 13-15), Pine's photopolymerizable composition is a negative working photosensitive resin composition as presently claimed. Therefore, Pine in view of Nishimiya would render obvious the present invention of claim 1.

With respect to present claim 2, since benzoic acid has a boiling point of 249°C, Pine in view of Nishimiya teach present invention of claim 2.

With respect to present claim 3, since Pine uses an aqueous *alkaline* solution for developing his photopolymerizable element (see col.5, lines 13-15), it is the Examiner's position that it is implied that Pine's binder is alkali-soluble. Therefore, Pine in view of Nishimiya teaches present invention of claim 3.

With respect to present claim 4, Pine teaches (col.4, lines 67-68, col.5, lines 1-15) that printing reliefs can be made by imagewise-exposing (using for example, an image-bearing

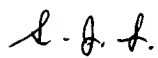
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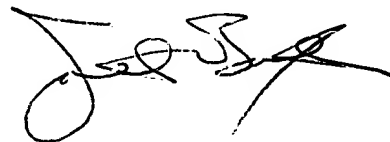
transparency) the photopolymerizable layer of his photopolymerizable element to actinic radiation and then developing by removing the unexposed portions of the photopolymerizable layer using an aqueous alkaline developer solution. Therefore, Pine in view of Nishimiya teaches present invention of claim 4.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sin J. Lee whose telephone number is (703) 305-0504. The examiner can normally be reached on Monday-Friday from 8:30 am EST to 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Janet Baxter, can be reached on (703) 308-2303. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9311 for after final responses or (703) 872-9310 for before final responses.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-0661.


S. Lee
April 25, 2002



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